

Notice of Allowability

Application No.

10/722,761

Examiner

Sheng-Jen Tsai

Applicant(s)

SHORB, CHARLES S.

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/21/2007.
2. ☒ The allowed claim(s) is/are original claims 1-15 and 17-44.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. This Office Action is taken in response to Applicants' Amendment and Remarks filed on December 21, 2007 regarding application 10/722,761 filed on November 26, 2003.

2. Claims 1, 40-41 and 43-44 have been amended.

Claims 1-44 are pending for consideration.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

4. Authorization for this examiner's amendment was given in a telephone interview with John V. Biernacki (Reg. No. 40,511) on 01/10/2008.

The claims of the application have been amended as follows:

- **Original Claim 16 is now cancelled.**
- **Original Claim 1 is now amended to be:**

"A memory for storing a computer-implemented shared locking data store for handling multiple executable entities' access to at least one resource, said shared locking data store being stored in a computer memory, said shared locking data store comprising: write requested data that is indicative of when a write request for the resource has been made;

writer active data that is indicative of whether a writer process is actively undergoing a write operation with respect to the resource;

wait event posted data, wherein the wait event posted data is indicative of whether a read request to the resource has completed, wherein the wait event posted data is used to indicate when a write request can access the resource;

reader data that is indicative of whether a reader process is active and attempting to read from the resource;

wherein the shared locking data store allows writer and reader locking state information to be determined so that access to the resource can be handled;

wherein encapsulation of both lock status data and the reader data in the shared locking data store allows a hardware atomic operation to operate upon both the lock status data and the reader data as a single unit for determining how access to the resource is to be handled;

wherein the multiple executable entities' access is a concurrent access to the at least one resource;

wherein a set status for the write requested data indicates whether an operating system (OS) mutex lock is to be used for processing access to the resource and is used to avoid an OS mutex lock when no writer process is pending."

▪ **Original Claim 40 is now amended to be:**

"A computer-implemented method for handling multiple executable entities' access to at least one resource, comprising:

receiving a request from an executable entity to access a resource;
determining how to process the resource request based upon lock state data;
wherein lock state data comprises write requested data and reader data;
wherein the write requested data is indicative of when a write request for the resource has been made with respect to the resource;
wherein if the write requested data indicates that a write request has not been made for the resource, then providing access to the resource such that an operating system (OS) mutex is avoided for a read lock acquisition;
wherein the reader data is indicative of whether a reader executable entity is active and attempting to read from the resource;
wherein encapsulation of both lock status data and the reader data in the shared locking data store allows a hardware atomic operation to operate upon both the lock status data and the reader data as a single unit for determining how access to the at least one resource is to be handled;
wherein the multiple executable entities' access is a concurrent access to the at least one resource;
wherein a set status for the write requested data indicates whether an operating system (OS) mutex lock is to be used for processing access to the resource and is used to avoid an OS mutex lock when no writer process is pending."

▪ **Original Claim 41 is now amended to be:**

"A computer-implemented apparatus for handling multiple executable entities' access to at least one resource, comprising:

means for receiving a request from an executable entity to access a resource;

means for determining how to process the resource request based upon lock state data;

wherein lock state data comprises write requested data and reader data,

wherein the write requested data is indicative of when a write request for the resource has been made with respect to the resource;

wherein if the write requested data indicates that a write request has not been made, then providing access to the resource such that an operating system (OS) mutex is avoided for a read lock acquisition;

wherein the reader data is indicative of whether a reader executable entity is active and attempting to read from the resource;

wherein encapsulation of both lock status data and the reader data in the shared locking data store allows a hardware atomic operation to operate upon both the lock status data and the reader data as a single unit for determining how access to the at least one resource is to be handled;

wherein the multiple executable entities' access is a concurrent access to the at least one resource;

wherein a set status for the write requested data indicates whether an operating system (OS) mutex lock is to be used for processing access to the resource and is used to avoid an OS mutex lock when no writer process is pending."

▪ **Original Claim 43 is now amended to be:**

"A machine-readable medium or media ~~having~~ storing software instructions for handling multiple executable entities' access to at least one resource, said software instructions,

when executed by a machine, cause the machine to:

receiving a request from an executable entity to access a resource;

determining how to process the resource request based upon lock state data;

wherein lock state data comprises write requested data and reader data;

wherein the write requested data is indicative of when a write request for the resource has been made with respect to the resource;

wherein if the write requested data indicates that a write request has not been made for the resource, then providing access to the resource such that an operating system (OS) mutex is avoided for a read lock acquisition;

wherein the reader data is indicative of whether a reader executable entity is active and attempting to read from the resource;

wherein encapsulation of both lock status data and the reader data in the shared locking data store allows a hardware atomic operation to operate upon both the lock status data and the reader data as a single unit for determining how access to the at least one resource is to be handled;

wherein the multiple executable entities' access is a concurrent access to the at least one resource;

wherein a set status for the write requested data indicates whether an operating system (OS) mutex lock is to be used for processing access to the resource and is used to avoid an OS mutex lock when no writer process is pending."

Allowable Subject Matter

5. Claims 1-15 and 17-44 are allowed.

Reason of Allowance

6. Claim 43 recites "A machine-readable medium or media storing software instructions for handling multiple executable entities' access to at least one resource, ..."

Since claim 43 recites "A machine-readable medium or media storing software instructions," it is clear that the machine-readable medium or media is the type of medium that is capable of storing data/information/instructions.

However, the specification of the application does not explicitly define what constitutes "a machine-readable medium or media." The Examiner, in allowing claim 43, interprets that the limitation "a machine-readable medium or media" includes only those medium or media that are statutory subject matter.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheng-Jen Tsai whose telephone number is 571-272-4178. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheng-Jen Tsai
Examiner
Art Unit 2186

January 10, 2008



MATTHEW KIM
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